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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/196,680	11/20/1998	STEPHEN J. MEYER	16114:E-US	9428
60708 7590 10/18/2007 FOR: TYCO FIRE & BUILDING PRODUCTS PROSKAUER ROSE LLP 1001 Pennsylvania Avenue, NW Suite 400 South Washington, DC 20004-2533			EXAMINER KIM, CHRISTOPHER S	
			ART UNIT 3752	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/196,680

Applicant(s)

MEYER ET AL.

Examiner

Christopher S. Kim

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3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14, 15 and 20-74 is/are pending in the application.
- 4a) Of the above claim(s) 55-61 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-11, 14, 15, 20-54 and 62-74 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 11, 2007 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1-11, 14, 15, 20-41, 46-54, 63-74 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1-11, 14, 15, 20-41, 46-54, 63 recite "...the deflector having a first arm, a second arm and a generally planar face portion generally orthogonal to the central axis supported by the first and second arm..." The disclosure, as originally filed, fails to teach the deflector having first and second arms that support a generally planar face.

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The specification discloses that arms 22, 24 of yoke 20 supports deflector 40. Deflector 40 has arms 52, 54 but they fail to support the planar face portion 42.

Claim 64 recites a means for transforming and delivering which appears to invoke means plus function under 35 U.S.C. 112, six paragraph. The means plus function defines a dual function, one of which requires elements and/or function beyond the deflector, i.e., the average density of 0.15 gallons per minute per square feet is also dependent on the flow rate and pressure of the water provided to the sprinkler and deflector. The disclosure, as originally filed, fails to teach a structure which performs the dual function. See MPEP 2181.II.

Claims 67 and 72-73 recite "...the deflector includes a face portion...the face portion consisting of a single flow opening..." The disclosure, as originally filed, discloses the face portion having several flow openings. The flow deflector has a face portion having several radial slots/openings which permits fluid flow.

4. Claims 64-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 64 recites a means for transforming and delivering which appears to invoke means plus function under 35 U.S.C. 112, six paragraph. The means plus function defines dual function, one of which requires elements and/or function beyond the deflector, i.e., the average density of 0.15 gallons per minute per square feet is also dependent on the flow rate and pressure of the water provided to the sprinkler and deflector. The metes and bounds of the claimed invention cannot be determined

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because the specification does not disclose a structure which performs the dual function. See MPEP 2181.II.

Claim Rejections - 35 USC § 103

5. Claims 1-11, 14, 15, 20-54, 62 and 64-74 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Tramm.

Fischer discloses a sprinkler comprising: a generally tubular body 30 having a central passageway 31, a closure 40, a trigger 44, a deflector 38; a face portion 76; a canopy portion 62; two frame arms 34; two support arms (no reference numbers); a single flow opening 79. Fischer teaches the use of a deflector 38 shaped and positioned to transform a horizontal flow of water into a spray pattern of droplets dispersed over a generally horizontal, rectangularly-shaped coverage area (see figures 1 and 6). The coverage area may be up to 16 ft x 24 ft (see column 3 lines 55-58). Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the range of K-factors (greater than 9) as taught by Tramm to provide a specific flow rate depending on pressure.

The device of Fischer in view of Tramm discloses the claimed limitation with the exception of the water flow rate and coverage area being at a height of only three feet below the canopy portion of the deflector. Fischer in view of Tramm discloses the

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structural limitations, K-factors including the relationship between flow rates and pressures, and the coverage area. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have positioned the sprinkler of Fischer in view of Tramm three feet above the coverage area to extinguish fires in three feet high compartments.

Fischer discloses the limitations of the claimed invention with the exception of the liquid filled glass bulb. Tramm discloses, pictorially, in figure 2, a liquid filled glass bulb 20. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have replaced the trigger of Fischer with the trigger (liquid filled glass bulb) of Tramm to eliminate the need for solder.

Fischer discloses, in column 3, lines 55-58, a coverage area of 16 ft x 24 ft (using a deflector comprising a generally planar face portion and a canopy portion, see figure 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made that the coverage area is dependent on the fluid pressure, and therefore, any coverage area less than 16 ft x 24 ft can be attained by reducing the pressure (or increasing the K-factor which results in a lower pressure as defined by the formula in column 5, lines 30-38 of Tramm). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have adjusted the coverage area depending on the size of the room, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

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The functional recitation "...and when the sidewall fire sprinkler is paired with an identical sidewall fire sprinkler mounted approximately sixteen feet apart on a generally planar wall surface with a collection area of approximately sixteen feet between the sprinklers and sixteen feet away from one of the sprinklers, the collection area located at either one of a distance of about thirty-six inches and a distance of approximately six feet and 7.5 inches below each of the sidewall fire sprinklers so that water is delivered to the collection area at an average density of about 0.15 gallons per minute per square feet" merely recites the ability to so perform. The device of Fischer in view of Tramm discloses the structural limitations of applicant's claimed invention, and therefore, it too has the capability to so perform.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. MPEP 2114.

6. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Tramm, Pieczykolan (H121), and Bosio et al. (5,727,737).

Fischer discloses a sprinkler comprising: a generally tubular body 30 having a central passageway 31; a frame arms 34, a closure 40, a trigger 44, a deflector 38; a face portion 76; a canopy portion 62. Fischer teaches the use of a deflector 38 shaped and positioned to transform a horizontal flow of water into a spray pattern of droplets dispersed over a generally horizontal, rectangularly-shaped coverage area (see figures 1 and 6). The coverage area may be up to 16 ft x 24 ft (see column 3 lines 55-58).

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Fischer differs from what is being claimed in the trigger 44 being a liquid-filled glass bulb and the tubular body having a K factor greater than 9.

Regarding the liquid-filled glass bulb, Bosio teaches, in column 2, lines 38-33, that glass bulb containing heat-expandable liquid and fusible solder element are interchangeable. Pieczykolan teaches a spring washer and bulb design such that thinner walled and faster acting glass bulbs may be employed to ensure quicker release. See Pieczykolan column 3, lines 49-68. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the bulb design of Pieczykolan to ensure quicker release.

Regarding the tubular body having a K factor greater than 9, Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0. Tramm further teaches, in column 5, lines 30-45, the relationship between flow rate and K factor and flow pressure. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the range of K-factors (greater than 9) as taught by Tramm to provide a specific flow rate depending on pressure or to increase flow rate given a specific pressure.

Response to Arguments

7. Applicant's arguments with respect to claims 1-11, 14, 15, 20-41, 46-54, 63 have been considered but are moot in view of the new ground(s) of rejection.

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8. Applicant's arguments filed June 11, 2007 have been fully considered but they are not persuasive.

Regarding claim 64, applicant argues that the means plus function recitation is supported by the specification because the specification teaches a "deflector being shaped and positioned to transform..." and the describes the sidewall sprinkler system corresponding to the claimed means of claim 64. While the specification describes the overall sprinkler system, it fails to teach what structure of the deflector 40 enables the function of the means claimed in claim 64. It is uncertain how much of the deflector described in the specification is required to perform the means plus function recitation. Should the entirety of the specification be read into the means plus function recitation? Additionally, the deflector alone is incapable of providing the claimed function. The sprinkler system requires the deflector plus a properly sized passage 13 and supply pressure capable of providing the proper K-factor to achieve the coverage area. Therefore, the "means for transforming" reasonably defines a deflector which is capable of performing the function only when combined with a properly sized tubular body and supply pressure. So, how much of the structure of the disclosed deflector is essential to be able to perform the recited function? The specification fails to define the structure that is necessary for the means plus function recitation to determine the metes and bounds of the claimed invention.


Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher S. Kim
Primary Examiner
Art Unit 3752

CK